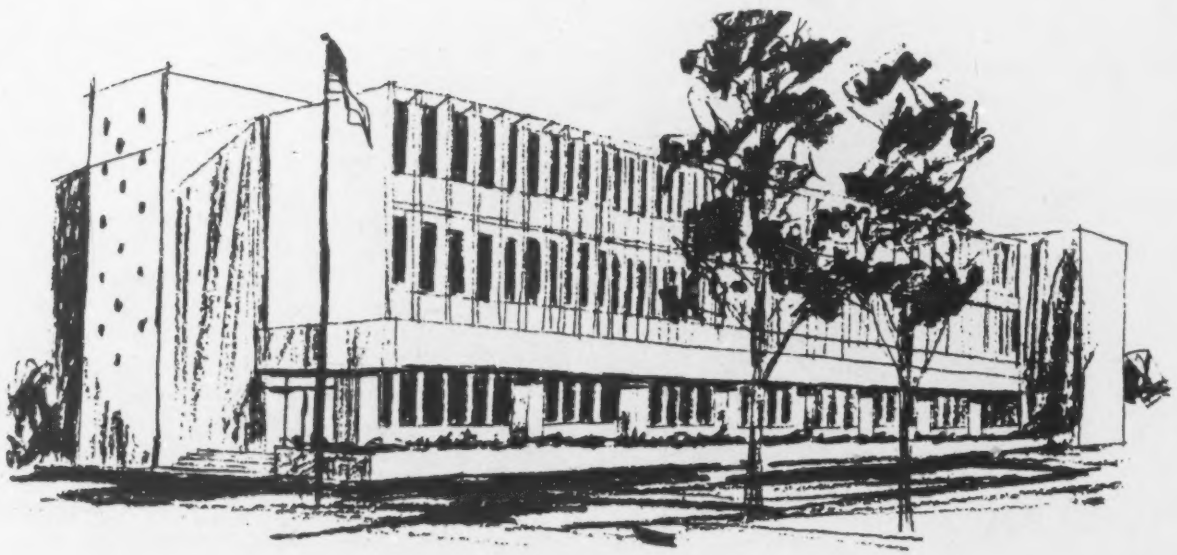
A SURVEY OF THE ENERGY AND WATER USE OF SELECTED HOTELS AND MOTELS

1982



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FOREWORD

Part I of this report contains the 1982 energy use data for 208 hotel/motel properties located in 37 states and the District of Columbia. It compares the energy use of the same properties for 1981 and 1982.

The 1982 versus the 1981 energy use data of each of the 187 conventional hotels/motels is listed in Appendix A by size (number of guest rooms). Appendix B lists the energy use of 21 all-electric properties. Appendix C includes a listing of all 208 properties by location (state and region).

The 1982 energy use data represents properties with a total of 53,723 guest rooms and a total interior building area of 31,161,988 square feet. The total energy requirement of the 208 properties was 4.01 trillion Btu's - an average of 128,742 Btu/sq ft/yr, down from 131,955 Btu/sq ft in 1981.

The 1982 data represents 2.7 percent of the total number of properties and 5.0 percent of the total number of rooms of the membership of the American Hotel and Motel Association as of December 31, 1982.

	AH&MA Membership	Properties Surveyed 1982	Percent of AH&MA Membership
Number of Properties	7,831	208	2.7
Number of Rooms	1,080,247	53,723	5.0

Since the Technical Services Center (formerly the Energy Technical Center) came into being in early 1977, the staff has conducted annual energy use surveys. The continuing analysis of the energy use over the past six years is highly indicative that the industry has made substantial strides in energy conservation and management practices. A summary of the energy surveys conducted for the years 1977-1982 is shown on the following table.

Annual Energy Use Surveys: 1977-1982

	1977	1978	1979 (Same Properties)	1979	1980 (Same Properties)	1980	1981 (Same Properties)	1981	1982 (Same Properties)
No. of Properties	210	284	284	323	323	261	261	208	208
No. of Guest Rooms	59,648	68,911	69,368	70,311	71,137	64,293	64,607	51,431	53,723
Total Sq Ft (Millions)	42.6	40.4	40.8	39.8	40.3	38.5	38.5	29.8	31.2
Total Energy Use (Trillions of Btu's)	7.7	6.2	5.9	5.7	5.6	5.5	5.3	3.9	4.0
Btu/Sq Ft/Yr	181,685	153,308	143,977	143,055	137,801	141,919	136,620	131,955	128,742
Indicated decrease in Energy Use (%)									
1978 versus 1977	-	15.6							
1979 versus 1978	-	-	6.1						
1980 versus 1979	-	-	-	-	3.7				
1981 versus 1980	-	-	-	-	-	-	3.7		
1981 versus 1982	-	-	-	-	-	-	-	-	2.4
1982 versus 1977	-	-	-	-	-	-	-	-	29.1

Part II of this report contains a survey of the domestic water use of 162 hotels/motels in 1982. The properties surveyed are located in 35 states and are of various sizes (number of guest rooms), types (transient, convention, resort) and have a variety of water-using facilities.

Water availability is becoming a serious problem in certain areas of the United States, and because of the need for new or expanded sewage disposal facilities in many communities, costs are increasing substantially. Therefore, since energy and water use are closely related and both are essential to the operation of a hotel/motel, the Technical Services Center requested water use data from the participating properties in the 1982 annual energy use survey. Such requested data was received from 162 of the 208 properties included in the annual energy survey.

The Technical Services Center believes that such water use data can provide water use guidelines to property owners/managers and, also, assist architect/engineer firms involved in designing and constructing hotels/motels to consider factors that will conserve water.

* * *

I. A SURVEY OF THE ENERGY REQUIREMENTS OF 208 HOTELS AND MOTELS - 1982 versus 1981

A. INTRODUCTION

The survey of the energy requirements of 208 hotels/motels properties contained in this report are considered in two different aspects -

...energy requirements by size of property (number of guest rooms);

...by location (geographical area)

Appendix A lists the 1982 versus 1981 energy use data of each of the 187 properties with conventional energy systems by size of property. (Properties with conventional energy systems are defined as those where a combination of electricity and fossil fuel(s) are used for the operation of the property and comfort and needs of the guests.)

No. of Guest Rooms	No. of Conventional Properties
Up to 150 rooms	55
151 to 200 rooms	47
201 to 300 rooms	58
301 to 500 rooms	14
Over 500 rooms	13
Total	187

Appendix B lists the 1982 versus 1981 electricity use of 21 all-electric properties by size of property.

No. of Guest Rooms	No. of All-Electric Properties
Up to 150 rooms	18
Over 150 rooms	3
Total	21

Appendix C is a listing of the 208 properties (both conventional systems and all-electric) by state and regional location.

Region	No of Properties
Northeast	16
Midwest	50
Southeast	72
South Central	34
Rocky Mountain	12
Pacific Coast	24
Total	208

Location and Size Distribution of 208 Properties

Hotels and motels included in this report are located in 37 states and the District of Columbia. Table 1 is a summary of Appendices A and B and lists the properties by state location and size. Figure 1 graphically illustrates the number of properties by state location.

Diversity of Energy Use

To illustrate the wide diversity in energy use of the 208 properties, the following is an assessment of the percentage, or number of properties that fell within certain numerical ranges of usage.

	Btu/Sq Ft
Minimum property	66,869
20 properties (10%) were less than	82,820
41 properties (20%) were less than	99,602
63 properties (30%) were less than	110,911
84 properties (40%) were less than	119,939
104 properties (50%) were less than	127,722
Average - All Properties	129,590
126 properties (60%) were less than	137,845
148 properties (70%) were less than	147,729
169 properties (80%) were less than	155,705
188 properties (90%) were less than	165,731
Maximum Property	234,745

Energy Values

Throughout this report the following values were used for the various energy sources.

Energy Source	Unit	Value in British Thermal Units
Electricity	Kwh	3,412 Btu
Natural Gas	Therm or 100 Cu Ft	100,000 Btu
Fuel Oil	Gallon	140,000 Btu
Propane	Gallon	91,500 Btu
Steam	Pound	1,000 Btu

Indicated Energy Use Reduction - 1982 versus 1981

This report compares the energy use of the same hotels/motels (208 properties) for 1981-1982. The following summary indicates a reduction in energy use of 2.4 percent.

	208 Hotels/Motels Surveyed	
	1981	1982
Number of Guest Rooms	51,431	53,723
Total Sq Ft (Millions)	29.8	31.2
Total Energy Use (Trillions of Btu's)	3.9	4.0
Btu/Sq Ft/Yr	131,955	128,742
Indicated Decrease (1982 versus 1981)	--	2.4%

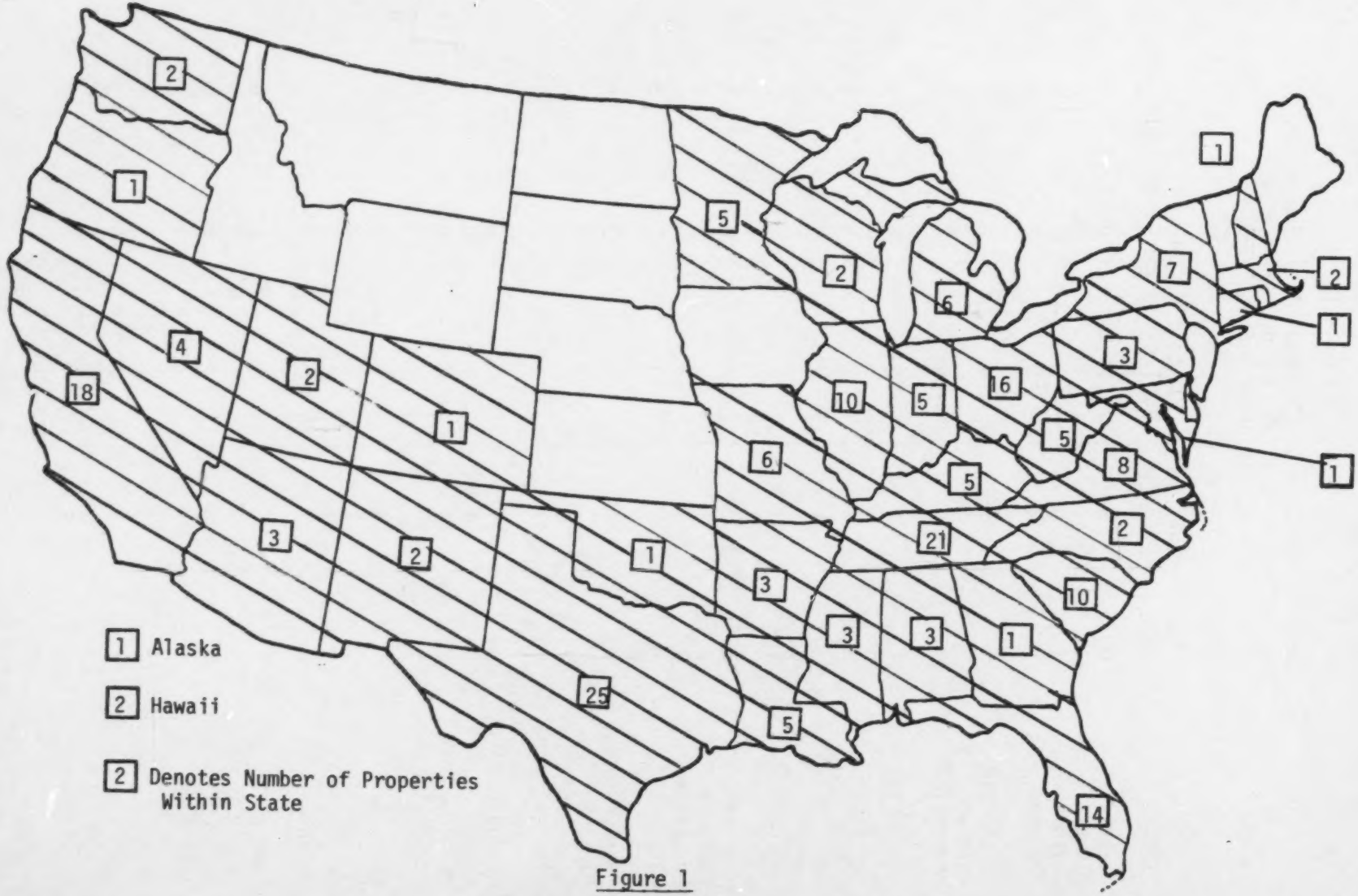

Figure 1

State Location of 208 Properties Surveyed

Table 1

Location and Size of 208 Hotel/Motel Properties
(1982 versus 1981 Energy Use Data on
File at ETC as of June 1, 1983)

State	Up to 150 Rooms	151 to 200 Rooms	201 to 300 Rooms	301 to 500 Rooms	Over 500 Rooms	Total Properties
Alabama	0	1	2	0	0	3
Alaska	0	0	1	0	0	1
Arizona	3	0	0	0	0	3
Arkansas	1	0	2	9	0	3
California	5	3	4	3	3	18
Colorado	0	1	0	0	0	1
Connecticut	0	0	0	1	0	1
Dist. of Columbia	1	0	0	0	0	1
Florida	4	1	6	3	0	14
Georgia	0	0	0	0	1	1
Hawaii	0	0	1	0	1	2
Illinois	1	1	4	2	2	10
Indiana	1	2	2	0	0	5
Kentucky	3	1	0	1	0	5
Louisiana	0	1	3	0	1	5
Maryland	1	0	0	0	0	1
Massachusetts	1	0	1	0	0	2
Michigan	1	3	2	0	0	6
Minnesota	2	3	0	0	0	5
Mississippi	0	1	2	0	0	3
Missouri	0	1	5	0	0	6
Nevada	0	1	1	0	2	4
New Hampshire	1	0	0	0	0	1
New Mexico	1	0	1	0	0	2
New York	1	3	1	1	1	7
N. Carolina	1	1	0	0	0	2
Ohio	9	1	6	0	0	16
Oklahoma	0	1	0	0	0	1
Oregon	0	0	0	1	0	1
Pennsylvania	1	0	1	1	0	3
S. Carolina	6	3	1	0	0	10
Tennessee	5	5	9	1	1	21
Texas	12	9	2	1	1	25
Utah	0	2	0	0	0	2
Virginia	7	1	0	0	0	8
W. Virginia	4	1	0	0	0	5

Table 1 (Cont'd)

Location and Size of 208 Hotel/Motel Properties
(1982 versus 1981 Energy Use Data on
File at ETC as of June 1, 1983)

State	Up to 150 Rooms	151 to 200 Rooms	201 to 300 Rooms	301 to 500 Rooms	Over 500 Rooms	Total Properties
Washington	1	0	1	0	0	2
Wisconsin	1	1	0	0	0	2
Totals	74	48	58	15	13	208

Above 208 properties represent:

31,161,988 sq ft of building area
53,723 guest rooms

B. A SURVEY OF THE ENERGY REQUIREMENTS OF 187 HOTELS AND MOTELS WITH CONVENTIONAL ENERGY-USING SYSTEMS (By Size of Property).

Introduction

Appendix A presents the 1981 and 1982 energy use data for each of the 187 hotel/motel properties contained in the survey with conventional energy systems (electricity/fossil fuel) and is organized by number of guest rooms of each property. These data are the basis for the analyses contained in this section of the report.

Table 2 compares the 1981 with the 1982 energy requirements of the conventional properties included in this survey. The table indicates that the average annual energy use by property size was as follows:

Size of Property	Btu/Sq Ft/Yr 1981	Btu/Sq Ft/Yr 1982	Percent Increase (+) Decrease (-)
...Up to 150 rooms (55 properties)	133,885	128,117	-4.3
...151 to 200 rooms (47 properties)	143,946	140,839	-2.2
...201 to 300 rooms (58 properties)	128,608	128,229	-0.3
...301 to 500 rooms (14 properties)	103,107	108,238	+5.0
...Over 500 rooms (13 properties)	139,647	132,516	-5.1
...Average for 187 properties	132,865	129,590	-2.5

Percentage-wise, on the basis of number of guest rooms, the distribution in 1982 of the 187 conventional properties was as follows:

Table 2

Annual Energy Requirements
(1982 versus 1981)
187 Hotels/Motels with Conventional Energy Systems

By Number of Guest Rooms

	Total Sq Ft		Total Btu's (Millions)		Average Btu Sq Ft		Increase/ Decrease
	1981	1982	1981	1982	1981	1982	1981 1982
Up to 150 Rooms (55 properties)	3,117,021	3,104,624	417,324	397,758	133,885	128,117	-4.3%
151 to 200 Rooms (47 properties)	4,042,131	4,172,321	581,852	587,626	143,946	140,839	-2.2%
201 to 300 Rooms (58 properties)	7,110,851	7,330,881	914,513	940,036	128,608	128,229	-0.3%
301 to 500 Rooms (14 properties)	3,246,109	3,246,878	334,697	351,437	103,107	108,238	+5.0%
Over 500 Rooms (13 properties)	11,631,735	12,621,588	1,624,341	1,672,569	139,647	132,516	-5.1%
Total - 187 Properties	29,147,847	30,476,292	3,872,727	3,949,426	132,865	129,590	-2.5%

Size of Property	% of Total Properties	% of Total Sq Ft	% of Total Energy Requirements
Up to 150 Rooms (55 properties)	30	10	10
151 to 200 Rooms (47 properties)	25	14	15
201 to 300 Rooms (58 properties)	31	24	24
301 to 500 Rooms (14 properties)	7	11	9
Over 500 Rooms (13 properties)	7	41	42
	100	100	100

The above tabulation indicates that 55 properties (up to 150 rooms), or 30% of the total properties, used only 10% of the total annual energy requirement, while 13 properties (over 500 rooms), or 7% of total properties, used 42% of the annual energy requirements.

From Table 2 it is also indicated that as the size (number of guest rooms) of the property increases, the square feet per guest room also increases. This reflects the high ratio of public area to guest room area that is characteristic of the larger hotels.

Size of Property-1982	Sq Ft per Guest Room
Up to 150 rooms	459
151 to 200 rooms	520
201 to 300 rooms	468
301 to 500 rooms	614
Over 500 rooms	775
Average - All Properties	586

Guest Room Distribution by Size of Property

The following tabulation shows the distribution of guest rooms by size of property. Note that those properties over 500 rooms represent only 7% of total properties, but account for 31% of total rooms. On the other hand, those properties of less than 150 rooms represent 30% of total properties but only 14% of total rooms.

Size and No of Properties	No of Rooms Represented	Percent of Total Rooms	Average No. of Rooms Per Property
Up to 150 rooms (55 properties)	6,757	14	123
151 to 200 rooms (47 properties)	8,022	15	171
201 to 300 rooms (58 properties)	15,671	30	270
301 to 500 rooms (14 properties)	5,289	10	378
Over 500 rooms (13 properties)	16,287	31	1,253
187 Properties	52,026	100	278

Use of Electricity By Size of Property

Table 3 indicates that the use of electricity of the 187 properties in 1982 ranged from 18.4 Kwh/sq ft/yr for properties "Up to 150 rooms" to 19.3 Kwh/sq ft for properties "201 to 300 rooms". The average for all properties was 19.1 Kwh/sq ft/yr. (65,169 Btu's/sq ft)

Use of Fossil Fuels - By Size of Property

Table 4 lists fossil fuel use by size of property (number of guest rooms). The 187 properties with conventional energy systems surveyed had an average requirement in 1982 of 64,521 Btu's/sq ft versus 66,576 Btu's/sq ft in 1981; a decrease of 3.1 percent.

Table 3

Use of Electricity
(1982 versus 1981)
187 Hotels/Motels with Conventional Energy Systems

By Size of Property

	Total Square Feet		Total Electric (MM Btu)		Btu/Sq Ft/Yr		Kwh/Sq Ft/Yr	
	1981	1982	1981	1982	1981	1982	1981	1982
Up to 150 Rooms (55 properties)	3,117,021	3,104,624	201,966	194,926	64,794	62,785	19.0	18.4
151 to 200 Rooms (47 properties)	4,042,131	4,172,321	275,822	273,271	68,237	65,496	20.0	19.2
201 to 300 Rooms (58 properties)	7,110,851	7,330,881	469,299	483,602	65,997	65,968	19.3	19.3
301 to 500 Rooms (14 properties)	3,246,109	3,246,878	193,733	205,599	59,682	63,322	17.5	18.6
Over 500 Rooms (13 properties)	11,631,735	12,621,588	791,372	825,643	68,036	65,415	19.9	19.2
All Properties	29,147,847	30,476,292	1,932,192	1,983,041	66,289	65,068	19.4	19.1

Table 4

Use of Fossil Fuels
(1982 versus 1981)
187 Hotels/Motels with Conventional Energy Systems

By Size of Property

	Total Sq Ft		Total (MM Btu)		Btu/Sq Ft/Yr		Increase/ Decrease
	1981	1982	1981	1982	1981	1982	1981 1982
Up to 150 Rooms (55 properties)	3,117,021	3,104,624	215,358	202,832	69,091	65,332	-5.4
151 to 200 Rooms (47 properties)	4,042,131	4,172,321	306,030	314,355	75,710	75,343	-0.5
201 to 300 Rooms (58 properties)	7,110,851	7,330,881	445,214	456,434	62,611	62,262	-0.6
301 to 500 Rooms (14 properties)	3,246,109	3,246,878	140,964	145,838	43,426	44,916	+3.4
Over 500 Rooms (13 properties)	11,631,735	12,621,588	832,969	846,926	71,612	67,101	-6.3
187 Properties	29,147,847	30,476,292	1,940,535	1,940,535	66,576	64,521	-3.1

Fossil fuels used included natural gas, fuel oil, purchased steam and propane. Natural gas represented 86% of the fossil fuel requirements.

ENERGY SOURCES

1981 and 1982

	1981		1982	
	Btu (Millions)	Percent	Btu (Millions)	Percent
Electricity	1,932,192	50	1,983,041	50
Fossil Fuels	1,940,535	50	1,966,385	50
Total	3,872,727	100	3,949,426	100
Fossil Fuels				
Natural Gas	1,661,369	85.6	1,689,437	86.0
Steam (Purchased)	266,002	13.7	265,002	13.4
Fuel Oil	11,451	0.6	11,001	0.6
Propane	1,713	0.1	945	-
Total	1,940,535	100.0	1,966,385	100.0

Energy Sources

The mix of energy requirements (electricity and fossil fuels) in 1982 by number of guest rooms of the 187 properties analyzed (Table 5) shows that the smaller properties (up to 150 rooms) used 49% electricity and 51% fossil fuel - mainly natural gas. The large properties (over 500 rooms) had a mix of 47% electricity and 53% fossil fuels. The average for all properties was 50% electricity, 50% fossil fuels.

Table 5

Energy Source of 187 Hotels/Motels
with
Conventional Energy Systems
1981 versus 1982

By Size of Property

	Percent Electricity			Percent Fossil Fuel		
	1981	vs	1982	1981	vs	1982
Up to 150 Rooms (68 properties)	48		49	52		51
151 to 200 Rooms (62 properties)	47		47	53		53
201 to 300 Rooms (68 properties)	51		51	49		49
301 to 500 Rooms (21 properties)	59		59	41		41
Over 500 Rooms (16 properties)	49		47	51		53
Average - All Properties	50		50	50		50

C. THE ENERGY REQUIREMENTS OF 21 ALL-ELECTRIC HOTELS/MOTELS

The 1982 report on the energy requirements of 208 hotels/motels included, as stated previously, a comparison of the energy use of 21 all-electric hotels for the years 1981 and 1982. The complete listing of the individual properties is contained in Appendix B.

The 21 all-electric properties ranged in size from 50 guest rooms to 360 guest rooms and were located in 11 states. Of the 21 all-electric properties included in this survey, sixteen are located in the Atlantic Coast states.

Table 6 is a listing of the 21 all-electric properties by state location. Energy use in 1982 of the properties surveyed ranged from 20.3 Kwh/sq ft in North Carolina, to 46.7 Kwh/sq ft in Illinois. The average use of electricity for the 21 properties was 26.7 Kwh/sq ft.

Table 7 lists the 21 all-electric properties by size and indicates the following requirements for electricity.

Size	Kwh/Sq Ft/Yr 1981 vs 1982	
Up to 150 Rooms (18 properties)	27.7	26.8
Over 150 Rooms (3 properties)	27.0	26.5
Average - 21 Properties	27.3	26.7

Table 6

All-Electric Hotels/Motels
Energy Use by State Location-1982

Location & No. of Properties	Total Sq Ft	Btu/Sq Ft/Yr	Kwh Per Sq Ft
South Carolina (5 properties)	85,540	75,438	22.1
North Carolina (1 property)	17,108	69,149	20.3
Virginia (6 properties)	102,648	82,515	24.2
Florida (2 properties)	34,216	79,290	23.2
Kentucky (1 property)	18,230	129,731	38.0
Illinois (1 property)	19,116	159,395	46.7
Dist. of Columbia (1 property)	65,375	106,111	31.1
Ohio (1 property)	17,108	98,843	29.0
Indiana (1 property)	37,668	119,279	35.0
Texas (1 property)	82,984	71,917	21.1
Connecticut (1 property)	205,703	92,852	27.2
Total - 21 Properties	685,696	91,032	26.7

Table 7

Energy Use
All-Electric Hotels/Motels
(Included in 1982 Energy Use Survey)

	Total Sq Ft	Electricity (MM Btu) 1981	Electricity (MM Btu) 1982	Btu/Sq Ft/Yr 1981	Btu/Sq Ft/Yr 1982	Kwh/Sq Ft/Yr 1981	Kwh/Sq Ft/Yr 1982
Up to 150 Rooms (18 properties)	359,341	33,935	32,859	94,432	91,442	27.7	26.8
Over 150 Rooms (3 properties)	326,355	30,031	29,561	92,019	90,579	26.5	27.0
Total/Average (21 properties)	685,696	63,966	62,420	93,286	91,032	27.3	26.7

D. THE ENERGY REQUIREMENTS OF 208 HOTELS AND MOTELS (By Geographical Location)

Appendix C lists the 1982 versus the 1981 energy use data of 208 individual hotels and motels by geographical (state) location. Appendix C includes both hotels/motels with conventional energy systems (187 properties) and all-electric systems (21 properties). These data serve as the source for the following analyses based on location of hotel/motel properties.

For the purpose of this survey and analysis, six major geographical areas were used. The six areas include the following states.

Northeastern States

Maine	New York
New Hampshire	New Jersey
Vermont	Pennsylvania
Massachusetts	Maryland
Connecticut	Delaware
Rhode Island	District of Columbia

Midwestern States

Ohio	Iowa
Indiana	Kansas
Illinois	North Dakota
Wisconsin	South Dakota
Michigan	Nebraska
Minnesota	Missouri

Southeastern States

Kentucky	South Carolina
West Virginia	Mississippi
Virginia	Alabama
Tennessee	Georgia
North Carolina	Florida

South Central States

Oklahoma	Louisiana
Arkansas	Texas

Rocky Mountain States

Montana
Wyoming
Colorado
New Mexico
Arizona
Nevada
Utah
Idaho

Pacific Coast States

California
Oregon
Washington
Hawaii
Alaska

Summary Energy Requirements By Geographical Location

Table 8 is a summary of energy use in 1982 of 208 properties by regional location. The South Central region with 155,003 Btu/sq ft had the highest annual energy use, while the 103,834 Btu/sq ft average for the Pacific region locations was the lowest.

Region	Btu/sq ft/yr
Northeast (16 properties)	129,885
Southeast (72 properties)	123,324
Midwest (50 properties)	138,694
South Central (34 properties)	155,003
Rocky Mountain (12 properties)	122,700
Pacific Coast (24 properties)	103,834
Average - 208 properties	128,742

Table 8 also indicates that percentage-wise, on the basis of regional location, the distribution of the 208 properties is as follows:

Region	% of Total Properties	% of Total Sq Ft	% of Total Energy Use
Northeast	8	11.0	11.0
Southeast	35	23.5	22.0
Midwest	24	23.0	25.0
South Central	16	13.5	16.0
Rocky Mountain	6	13.0	13.0
Pacific Coast	11	16.0	13.0

Table 8

Summary of
Energy Use by Geographic Area
1982

208 Hotels/Motels

	Total Sq Ft	Total Energy (MM Btu) Elec	Fossil Fuel	Total	Btu/Sq Ft/Yr Elec	Fossil Fuel	Total
Northeast (16 properties)	3,520,929	202,674	254,641	457,315	57,563	72,322	129,885
Southeast (72 properties)	7,251,331	551,569	342,695	894,264	76,065	47,259	123,324
Midwest (50 properties)	7,275,233	397,906	611,126	1,009,032	54,693	84,001	138,694
South Central (34 properties)	4,137,872	364,668	276,715	641,383	88,129	66,874	155,003
Rocky Mountain (12 properties)	4,122,361	286,179	219,634	505,813	69,421	53,279	122,700
Pacific Coast (24 properties)	4,854,262	242,465	261,574	504,039	49,949	53,885	103,834
All Regions (208 properties)	31,161,988	2,045,461	1,966,385	4,011,846	65,640	63,102	128,742

Use of Electricity by Region

Table 9 shows that the annual use of electricity of the 208 properties ranged from 14.6 Kwh/sq ft in the Pacific Coast region to 25.8 Kwh/sq ft in the South Central region. The average for all properties was 19.2 Kwh/sq ft (65,640 Btu/sq ft).

Use of Fossil Fuels by Region

Table 10 indicates that the region with the highest annual requirement for fossil fuels was the Midwest with 84,001 Btu/sq ft, followed by the Northeast with 72,322 Btu/sq ft. The Southeast region had the lowest requirement - 47,259 Btu/sq ft. The average for all properties was 63,102 Btu/sq ft.

Energy Sources

In Table 11, the Southeast is shown to have the highest annual requirement for electricity (62%) and the lowest requirement for fossil fuels (38%). The Midwest properties had the lowest annual requirement for electricity (39%) and the highest requirement for fossil fuels (61%). The average for all properties was 51% electricity and 49% fossil fuels.

Table 9

Use of Electricity - 1982
208 Hotels/Motels

By Geographical Area

	Total Sq Ft	Btu's Electricity (Millions)	Btu's Sq Ft	Kwh Sq Ft
Northeast (16 properties)	3,520,929	202,674	57,563	16.9
Southeast (72 properties)	7,251,331	551,569	76,065	22.3
Midwest (50 properties)	7,275,233	397,906	54,693	16.0
South Central (34 properties)	4,137,872	364,668	88,129	25.8
Rocky Mountain (12 properties)	4,122,361	286,179	69,421	20.3
Pacific Coast (24 properties)	4,854,262	242,465	49,949	14.6
208 Properties	31,161,988	2,045,461	65,640	19.2

Table 10

Use of Fossil Fuels - 1982
208 Hotels/Motels

By Geographical Area

	Total Sq Ft	Btu's Fossil Fuels (Millions)	Btu's Sq Ft	Therms[1] Sq Ft
Northeast (16 properties)	3,520,929	254,641	72,322	.72
Southeast (72 properties)	7,251,331	342,695	47,259	.47
Midwest (50 properties)	7,275,233	611,126	84,001	.84
South Central (34 properties)	4,137,872	276,715	66,874	.67
Rocky Mountain (12 properties)	4,122,361	219,634	53,279	.53
Pacific Coast (24 properties)	4,854,262	261,574	53,889	.54
208 Properties	31,161,988	1,966,385	63,102	.63

Note:

1 Equivalent therms (100,000 Btu) of natural gas

Table 11

Sources of Energy (1982)
208 Hotels/Motels

By Geographical Area

	Electricity		Fossil Fuels	
	Btu's (Millions)	% of Annual Use	Btu's (Millions)	% of Annual Use
Northeast (16 properties)	202,674	44	254,641	56
Southeast (72 properties)	551,569	62	342,695	38
Midwest (50 properties)	397,906	39	611.126	61
South Central (34 properties)	364,668	57	276,715	43
Rocky Mountain (12 properties)	286,179	57	219,634	43
Pacific Coast (24 properties)	242,465	48	261,574	52
208 Properties	2,045,461	51	1,966,385	49

II. A SURVEY OF THE DOMESTIC WATER USE OF 162 HOTELS/MOTELS-1982

A. INTRODUCTION

As stated in the "Foreword" of this report, water management goes hand-in-hand with energy management. The availability of potable domestic water, along with the increasing costs of constructing adequate facilities for disposal, are causing water to become more and more costly and could well be the hospitality industry's next "crisis".

The water use data indicates that water requirements vary somewhat from one property to another and from one region to another. In addition to the use of water in the guest room, the domestic water requirements of kitchens, laundries, swimming pools, irrigation, etc., substantially affect the overall water use of a property.

B. WATER USE OF 162 HOTELS/MOTELS - 1982

Appendix D of this report contains water use data obtained from 162 hotels/motels located in 35 states. Whenever the information was available, water use is shown by (1) available room, (2) occupied room, and (3) per guest.

Appendix D indicates the following ranges (low/high) of water use per available room, occupied room and guest room for the various sizes of properties:

Size of Property	Range of Gallons of Water Used Per Available Room	Occupied Room	Guest
Less than 75 Rooms	60-184	N/A	49-149
76 to 150 Rooms	76-251	105-385	94-262
151 to 200 Rooms	79-246	121-370	100-204
201 to 300 Rooms	88-381	130-427	140-248
301 to 500 Rooms	102-214	192-350	140-216
Over 500 Rooms	100-300	131-584	106-389

The lower ranges of water use are representative of properties engaged in water conservation practices. The low usage in the less than 75 room

range (14 properties-Appendix D-1) represent a group of properties without swimming pools or restaurants that have installed flow restrictors and dual flush toilets to reduce water consumption. The higher ranges of water use can be attributed to facilities such as pools, restaurants, laundries, irrigation, etc., and, in some cases the lack of water conservation practices and wastage due to leaking pipes, faucets, etc.

Of the 162 hotels/motels for which 1982 water use data was received, only 134 properties provided data on which water use per available room could be determined: 28 properties provided water use on a "per guest" basis only. An analysis of the water use of the 134 properties by geographical region (Table 12) indicates the use per available room ranged from 157 gallons in the North Central states to 205 gallons in the Rocky Mountain states. The average use for all properties was 179 gallons per available room. If an average 68% occupancy is assumed, the water use per occupied room was 264 gallons.

A comparison of water use of eight high-rise, convention type hotels verses 24 transient motels (100 to 200 rooms), representing a mix of geographical areas, revealed the following:

No. of Type Properties	No. of Rooms	Total Water Use (Gallons)	Gallons Per Available Room	Gallons Per Occupied Room (1)
8 Convention	12,912	854,433,900	181	266
24 Transient (2)	3,644	225,351,500	169	249

(1) Occupancy is assumed to be 68%.
(2) All transient properties have kitchens, laundries, and swimming pools.

Table 12

Water Use - 1982
By Region of United States
134 Hotels/Motels

Region	No of Properties	No of Rooms	No of Available Rooms 1982	Total Water Use (Gals/1000)	Gallons Per Available Room	Gallons Per Occupied Room (1)
Northeast/Mid-Atlantic	12	4,588	1,674,620	299,536.5	179	263
Southeastern	39	8,614	3,144,110	589,831.8	188	276
North Central	29	8,481	3,095,565	484,719.6	157	230
South Central	21	4,376	1,597,240	298,700.1	187	275
Rocky Mountain	10	5,613	2,048,745	419,849.2	205	300
Pacific Coast	23	7,965	2,907,225	501,864.4	173	254
All Regions	134	39,637	14,467,505	2,594,501.6	179	264

(1) Occupancy in all regions is assumed to be 68%.

APPENDIX A

Annual Energy Requirements
of
187 Hotels/Motels with Conventional Energy Systems
1982 versus 1981

By Size of Property

Appendix A-1: Up to 150 Rooms (55 Properties)

Appendix A-2: 151 to 200 Rooms (47 Properties)

Appendix A-3: 201 to 300 Rooms (58 Properties)

Appendix A-4: 301 to 500 Rooms (14 Properties)

Appendix A-5: Over 500 Rooms (13 Properties)

Appendix A-1

ANNUAL ENERGY REQUIREMENTS - 1982
With Comparison to 1981 Energy Use

55 Selected Properties
Up to 150 Rooms

Location (State)	Property Size (Sq Ft)	Electricity (Kwh/Sq Ft)		Electricity (Btu/Sq Ft)		Fossil Fuel (Btu/Sq Ft)		Total (Btu/Sq Ft)	
		1981	1982	1981	1982	1981	1982	1981	1982
Arizona	70,065	25.6	21.5	87,490	73,289	51,654	38,165	139,142	111,454
Arizona	57,387	20.5	21.7	69,842	74,024	71,724	72,996	141,566	147,020
Arizona	57,714	17.8	17.4	60,661	59,362	81,505	78,075	142,166	137,437
Arkansas	48,904	23.9	27.4	81,466	93,551	80,934	93,489	162,400	187,040
California	70,883	12.9	13.3	44,073	45,243	45,510	49,109	89,683	94,352
California	63,898	18.3	18.3	62,443	62,521	48,718	45,995	111,161	108,516
California	66,665	16.6	15.4	56,761	52,606	43,306	44,806	100,069	97,412
California	59,732	16.6	15.5	56,586	52,836	54,945	54,945	111,531	107,781
California	76,227	11.6	10.9	39,447	37,244	36,195	37,100	75,642	74,344
Florida	59,247	19.9	21.5	68,054	73,303	135,636	30,449	203,690	103,752
Florida	51,682	31.7	29.9	108,123	102,202	10,003	9,075	118,126	111,277
Kentucky	37,928	29.7	28.6	101,403	97,606	83,345	89,775	184,798	187,381
Kentucky	55,151	23.3	23.2	79,618	79,074	59,962	69,844	139,580	148,918
Maryland	54,274	16.8	16.6	57,375	56,823	109,703	104,157	167,078	160,980
Massachusetts	59,516	20.9	19.1	71,258	65,125	78,231	68,200	149,489	133,325
Michigan	77,110	17.7	17.7	60,368	60,226	77,098	73,842	137,466	134,068
Minnesota	69,189	14.0	13.6	47,955	46,293	99,091	102,314	147,046	148,607
Minnesota	63,338	15.6	12.5	53,064	42,755	160,669	146,673	213,733	189,428
New Hampshire	103,692	7.6	7.7	25,769	26,386	73,284	81,867	99,053	108,253
New Mexico	39,618	11.6	11.4	39,553	39,048	44,121	42,910	83,674	81,958
New York	69,769	14.7	15.8	50,211	53,892	92,029	67,351	142,240	121,243
Ohio	54,735	19.1	18.5	65,278	62,994	65,534	59,651	130,812	122,645
Ohio	48,860	23.0	22.6	78,612	77,055	63,692	58,823	142,304	135,878
Ohio	57,200	28.7	20.6	97,902	75,839	46,031	50,699	143,933	126,538

Appendix A-1 (Cont'd)

Up to 150 Rooms

Location (State)	Property Size (Sq Ft)	Electricity (Kwh/Sq Ft) 1981	Electricity (Kwh/Sq Ft) 1982	Electricity (Btu/Sq Ft) 1981	Electricity (Btu/Sq Ft) 1982	Fossil Fuel (Btu/Sq Ft) 1981	Fossil Fuel (Btu/Sq Ft) 1982	Total (Btu/Sq Ft) 1981	Total (Btu/Sq Ft) 1982
Ohio	61,575	16.6	16.3	56,879	55,477	69,168	67,365	125,847	122,842
Ohio	53,818	12.6	12.5	42,848	42,736	150,817	144,320	193,745	187,056
Ohio	55,262	17.7	18.3	60,439	62,375	138,757	130,904	199,196	193,279
Ohio	86,139	10.6	10.5	36,035	35,849	107,245	105,736	143,280	141,585
Ohio	75,884	23.2	23.3	79,042	79,411	72,136	86,649	151,178	160,060
Pennsylvania	72,713	20.5	18.8	69,987	64,239	65,958	64,569	135,945	128,808
South Carolina	88,321	18.4	19.1	62,635	65,284	34,578	40,149	97,213	105,433
Tennessee	62,950	19.1	19.2	65,242	65,576	50,230	54,615	115,472	120,191
Tennessee	41,819	21.9	23.5	74,679	80,107	43,999	48,375	118,678	128,482
Tennessee	55,887	24.1	25.2	82,327	85,834	73,273	73,470	155,600	159,304
Tennessee	54,567	19.6	19.8	67,037	67,660	108,839	99,749	175,876	167,089
Tennessee	55,162	17.5	18.6	59,624	63,577	97,549	101,120	157,173	164,697
Texas	37,375	18.7	15.5	63,652	52,997	51,157	44,468	114,809	97,445
Texas	37,375	18.2	17.9	62,127	61,057	40,615	42,488	102,742	103,545
Texas	38,870	16.0	19.4	56,519	66,324	48,495	54,078	105,094	120,402
Texas	38,870	15.3	16.4	52,045	55,956	41,883	41,111	93,928	97,067
Texas	38,870	22.0	14.3	75,225	48,932	32,287	37,252	107,512	86,184
Texas	39,618	27.7	28.7	94,553	97,834	11,863	12,040	106,416	109,874
Texas	45,598	14.5	17.3	49,410	59,169	32,523	33,686	81,933	92,855
Texas	38,123	16.7	15.0	56,868	51,281	50,442	49,209	107,310	100,490
Texas	37,001	19.2	14.4	65,485	49,215	41,323	34,621	106,808	83,836
Texas	45,598	14.9	13.8	51,011	47,195	39,410	32,852	90,421	80,047
Texas	47,466	19.0	18.3	64,867	62,297	18,118	15,127	82,985	77,424
Texas	48,214	20.4	19.5	69,876	66,557	73,360	58,842	143,236	125,399

Appendix A-1 (Cont'd)

Up to 150 Rooms

Location (State)	Property Size (Sq Ft)	Electricity (Kwh/Sq Ft) 1981	Electricity (Kwh/Sq Ft) 1982	Electricity (Btu/Sq Ft) 1981	Electricity (Btu/Sq Ft) 1982	Fossil Fuel (Btu/Sq Ft) 1981	Fossil Fuel (Btu/Sq Ft) 1982	Total (Btu/Sq Ft) 1981	Total (Btu/Sq Ft) 1982
Virginia	62,584	31.0	30.5	105,794	104,244	176	399	105,970	104,643
Washington	30,545	20.8	19.6	71,103	66,918	112,228	132,297	183,336	199,215
W. Virginia	47,860	22.9	20.5	78,124	69,808	57,584	59,528	135,708	129,336
W. Virginia	48,860	30.3	26.4	103,274	90,135	79,329	68,154	182,603	158,289
W. Virginia	56,201	20.6	19.6	70,497	66,921	68,415	62,259	138,912	129,179
W. Virginia	65,924	21.6	21.1	73,736	71,871	118,621	108,958	192,357	180,829
Wisconsin	62,791	15.4	16.1	52,396	55,040	70,631	53,957	123,027	108,997

Average/ All Properties:	1981	1982
Btu/sq ft	133,885	128,117

Appendix A-2

ANNUAL ENERGY REQUIREMENTS - 1982
With Comparison to 1981 Energy Use

47 Selected Properties
151 - 200 Rooms

Location (State)	Property Size (Sq Ft)	Electricity (Kwh/Sq Ft) 1981	Electricity (Kwh/Sq Ft) 1982	Electricity (Btu/Sq Ft) 1981	Electricity (Btu/Sq Ft) 1982	Fossil Fuel (Btu/Sq Ft) 1981	Fossil Fuel (Btu/Sq Ft) 1982	Total (Btu/Sq Ft) 1981	Total (Btu/Sq Ft) 1982
Alabama	72,745	25.7	25.1	87,827	85,738	72,472	66,616	160,299	152,354
California	143,081	15.0	14.6	51,404	49,769	45,066	42,591	96,470	92,360
California	101,006	17.8	14.4	60,778	49,047	111,617	45,284	172,395	94,331
California	77,309	18.0	19.8	61,571	67,664	85,786	86,678	147,357	154,342
Colorado	94,846	13.1	11.7	44,567	40,075	76,651	84,748	121,218	124,823
Florida	80,414	24.2	18.2	82,710	62,116	58,859	48,723	141,569	110,839
Illinois	110,890	15.6	14.4	53,133	49,256	72,730	70,683	125,863	119,939
Indiana	80,347	19.1	19.6	65,192	66,835	78,273	83,027	143,465	149,862
Indiana	83,216	12.8	12.6	43,681	42,972	110,772	106,266	154,453	149,238
Kentucky	66,000	21.9	15.0	74,636	51,212	107,530	102,364	182,166	153,576
Louisiana	97,821	31.7	30.0	108,204	102,575	68,198	55,182	176,402	157,757
Michigan	88,374	18.0	17.9	61,443	61,161	75,033	82,241	136,476	143,402
Michigan	99,792	13.2	14.0	45,064	47,829	74,946	78,062	120,010	125,892
Michigan	136,885	18.3	19.8	62,300	67,677	101,399	108,178	163,699	175,885
Minnesota	99,743	21.4	19.8	73,077	67,493	81,529	80,236	154,606	147,729
Minnesota	82,386	9.5	8.9 10.6	32,615	30,261	133,676	96,982	166,291	127,243
Minnesota	107,574	10.7	10.6	36,543	36,129	90,421	104,274	126,964	140,403
Mississippi	74,276	20.0	24.9	68,332	85,115	67,371	62,200	135,703	147,315
Missouri	94,780	16.9	16.7	47,035	56,879	69,593	94,229	116,628	151,108
Nevada	66,357	11.3	11.2	38,700	38,097	68,614	116,355	107,314	154,452
New York	80,998	20.9	20.0	71,434	68,162	34,902	36,618	106,336	104,780
New York	74,596	29.7	11.1	101,198	37,884	124,323	117,821	225,521	155,705
New York	83,871	26.9	26.8	91,963	91,498	32,120	29,831	124,083	121,329
North Carolina	84,561	31.3	31.3	106,846	106,929	36,908	43,602	143,754	150,530

Appendix A-2 (Cont'd)

151 - 200 Rooms

Location (State)	Property Size (Sq Ft)	Electricity (Kwh/Sq Ft) 1981	Electricity (Kwh/Sq Ft) 1982	Electricity (Btu/Sq Ft) 1981	Electricity (Btu/Sq Ft) 1982	Fossil Fuel (Btu/Sq Ft) 1981	Fossil Fuel (Btu/Sq Ft) 1982	Total (Btu/Sq Ft) 1981	Total (Btu/Sq Ft) 1982
Ohio	88,838	20.7	19.3	70,747	65,828	56,451	51,284	127,198	117,112
Oklahoma	86,314	21.8	21.5	74,414	73,522	60,002	60,083	134,416	133,605
South Carolina	66,780	20.3	17.9	69,286	61,156	125,768	101,722	195,054	162,878
South Carolina	88,789	26.4	25.6	90,011	87,308	24,688	21,343	114,699	108,651
South Carolina	99,358	21.6	19.9	73,653	67,856	78,081	82,490	151,734	150,346
Tennessee	87,148	18.7	18.7	63,708	63,972	75,985	79,623	139,693	143,595
Tennessee	71,978	24.2	24.2	82,609	82,720	80,052	73,981	162,661	156,701
Tennessee	101,606	17.1	17.3	58,264	58,933	71,787	75,429	130,051	134,362
Tennessee	90,838	20.0	20.9	68,242	71,292	55,615	56,430	123,857	127,722
Tennessee	77,406	24.5	26.8	83,417	91,285	44,428	42,671	127,845	133,956
Texas	62,707	23.4	26.4	79,939	89,990	58,702	68,557	138,661	158,547
Texas	91,602	21.5	21.6	73,372	73,754	53,361	53,470	126,733	127,224
Texas	90,604	19.8	23.7	67,580	81,000	62,790	74,368	130,370	155,368
Texas	59,897	37.3	40.3	127,168	137,403	43,324	45,511	170,492	182,914
Texas	73,907	22.5	22.7	76,894	77,462	83,876	92,738	160,770	170,200
Texas	78,412	19.5	20.1	69,892	68,485	68,255	72,055	134,775	140,540
Texas	123,926	19.9	19.4	67,863	66,273	42,719	49,384	110,582	115,657
Texas	141,509	20.9	18.6	71,203	63,558	77,126	65,762	148,329	129,320
Utah	81,378	15.8	15.8	53,835	54,044	86,620	96,771	140,455	150,815
Utah	80,649	12.8	13.0	43,547	44,253	117,571	158,737	161,118	202,990
Virginia	65,032	21.0	22.1	71,841	75,051	76,578	81,898	148,419	157,399
West Virginia	77,377	21.0	20.6	70,499	70,189	62,590	67,656	133,089	137,845
Wisconsin	104,398	13.6	13.6	46,562	46,342	127,522	148,997	174,084	195,339

Average/ All Properties:	1981	1982
Btu/sq ft	143,946	140,839

Appendix A-3

ANNUAL ENERGY REQUIREMENTS - 1982
With Comparison to 1981 Energy Use

58 Selected Properties
201 - 300 Rooms

Location (State)	Property Size (Sq Ft)	Electricity (Kwh/Sq Ft)		Electricity (Btu/Sq Ft)		Fossil Fuel (Btu/Sq Ft)		Total (Btu/Sq Ft)	
		1981	1982	1981	1982	1981	1982	1981	1982
Alabama	109,552	19.4	23.1	66,302	78,830	56,317	66,726	122,619	145,556
Alabama	101,157	19.3	18.5	65,897	63,139	39,829	41,836	105,726	104,975
Alaska	87,052	15.6	22.5	53,158	76,742	93,651	50,805	146,809	127,547
Arkansas	111,997	24.1	23.5	82,332	80,127	67,064	78,154	149,396	158,281
Arkansas	148,003	16.9	19.5	57,864	66,532	53,080	51,810	110,944	118,342
California	109,325	14.9	13.7	50,940	46,659	35,262	32,390	86,202	79,049
California	83,959	15.4	16.6	52,560	56,492	58,411	59,005	110,971	115,497
California	118,792	16.8	16.5	57,260	56,342	60,450	68,725	117,710	125,067
California	104,280	15.8	15.5	53,922	53,002	46,835	44,975	100,757	97,977
Florida	119,548	27.8	26.9	94,799	91,871	52,054	45,329	146,853	137,200
Florida	107,709	32.6	34.1	111,355	116,285	40,377	35,020	151,732	151,305
Florida	256,173	16.1	18.4	54,951	62,934	26,010	28,481	80,961	91,415
Florida	146,708	22.2	22.6	75,817	77,031	71,300	61,162	147,117	138,193
Florida	148,592	24.3	23.1	83,073	78,961	38,326	32,276	121,399	111,237
Florida	107,291	21.6	23.5	73,743	80,207	53,490	53,724	127,233	133,931
Hawaii	90,318	27.9	30.1	95,263	102,826	34,046	40,435	129,309	143,260
Illinois	103,628	23.9	26.8	81,706	91,568	97,840	82,748	179,546	174,316
Illinois	134,269	17.8	18.2	60,825	62,129	68,162	75,356	128,987	137,485
Illinois	146,701	17.0	18.0	58,132	61,567	83,714	57,662	141,846	119,229
Illinois	121,223	17.5	19.5	59,869	66,423	45,429	54,882	105,298	121,305
Indiana	129,117	19.5	19.9	66,428	68,016	89,415	97,028	155,843	165,044
Indiana	158,834	20.4	20.0	69,777	68,077	68,524	73,152	138,301	141,229
Louisiana	77,884	29.7	30.0	101,189	103,487	51,731	60,629	152,920	164,116
Louisiana	142,920	28.3	24.7	96,687	84,390	60,809	71,236	157,496	155,626

Appendix A-3 (Cont'd)

201 - 300 Rooms

Location (State)	Property Size (Sq Ft)	Electricity (Kwh/Sq Ft) 1981	Electricity (Kwh/Sq Ft) 1982	Electricity (Btu/Sq Ft) 1981	Electricity (Btu/Sq Ft) 1982	Fossil Fuel (Btu/Sq Ft) 1981	Fossil Fuel (Btu/Sq Ft) 1982	Total (Btu/Sq Ft) 1981	Total (Btu/Sq Ft) 1982
Louisiana	104,013	31.7	27.7	108,204	94,603	68,198	59,070	176,402	153,673
Massachusetts	160,885	21.3	25.3	72,835	86,273	60,086	68,117	132,921	154,390
Michigan	114,813	11.6	16.8	66,900	57,258	97,414	98,421	164,319	155,679
Michigan	123,985	14.9	15.8	50,990	53,773	63,677	62,894	114,667	116,667
Mississippi	93,531	32.1	31.9	109,525	108,834	55,928	56,847	165,453	165,731
Mississippi	118,200	26.7	27.4	91,252	93,338	76,511	72,766	167,843	166,104
Missouri	124,410	11.9	12.6	40,608	43,140	57,085	65,903	97,693	109,043
Missouri	207,934	12.8	12.8	30,896	43,682	66,607	65,944	97,503	109,626
Missouri	261,718	14.8	13.2	50,344	45,110	62,980	65,807	113,324	110,917
Missouri	90,022	14.9	14.6	50,954	49,788	66,550	118,382	117,504	162,170
Missouri	95,689	14.1	15.5	48,063	52,911	71,545	29,909	119,608	82,820
Nevada	152,763	13.2	11.4	45,220	38,753	49,141	43,911	94,561	82,664
New Mexico	146,224	15.7	15.7	53,575	53,568	51,612	55,318	105,187	108,886
New York	124,483	17.6	17.9	60,072	60,988	72,379	56,289	132,451	117,277
Ohio	109,362	19.1	17.4	65,269	59,244	65,535	114,683	130,804	173,927
Ohio	120,668	14.2	14.3	48,364	48,894	72,397	72,795	120,761	121,689
Ohio	126,902	14.5	15.4	49,361	52,426	90,842	98,407	140,203	150,833
Ohio	95,278	19.5	19.2	66,531	65,608	63,551	63,950	130,082	129,558
Ohio	144,157	14.5	16.4	49,495	55,904	38,971	53,893	88,466	109,797
Ohio	165,974	21.9	18.4	74,632	62,635	76,886	79,048	151,518	141,683
Pennsylvania	156,211	10.9	10.7	37,072	36,649	99,570	104,391	136,642	141,040
South Carolina	83,268	27.7	24.4	94,406	83,105	64,262	62,989	158,668	146,094
Tennessee	92,772	21.5	20.3	73,513	69,364	76,877	76,877	150,390	146,241
Tennessee	84,557	23.5	25.3	80,088	86,309	67,327	65,234	147,415	151,543
Tennessee	95,738	23.7	24.8	80,772	84,575	53,918	37,979	134,690	122,554
Tennessee	121,559	15.3	15.1	52,287	51,506	53,793	54,212	106,080	105,718
Tennessee	121,400	14.5	15.7	49,539	53,740	44,687	45,750	94,226	99,490
Tennessee	92,750	26.4	26.3	90,005	89,650	31,030	34,264	121,035	123,914

Appendix A-3 (Cont'd)

201 - 300 Rooms

Location (State)	Property Size (Sq Ft)	Electricity (Kwh/Sq Ft) 1981	Electricity (Kwh/Sq Ft) 1982	Electricity (Btu/Sq Ft) 1981	Electricity (Btu/Sq Ft) 1982	Fossil Fuel (Btu/Sq Ft) 1981	Fossil Fuel (Btu/Sq Ft) 1982	Total (Btu/Sq Ft) 1981	Total (Btu/Sq Ft) 1982
Tennessee	120,894	17.9	18.4	60,985	62,857	43,830	53,733	104,815	116,590
Tennessee	138,981	20.1	20.6	68,556	70,384	39,948	41,020	108,504	111,404
Tennessee	148,482	23.2	25.2	79,292	82,401	59,513	54,316	138,805	136,717
Texas	82,894	24.2	25.2	82,462	85,989	72,619	85,253	155,081	171,242
Texas	171,205	17.0	16.4	57,895	55,974	72,177	80,780	130,072	136,754
Washington	124,075	11.3	11.4	38,615	38,832	81,345	79,903	119,960	118,735

Average/ All Properties:	1981	1982
Btu/sq ft	128,608	128,229

Appendix A-4

ANNUAL ENERGY REQUIREMENTS - 1982
With Comparison to 1981 Energy Use

14 Selected Properties
301 to 500 Rooms

Location (State)	Property Size (Sq Ft)	Electricity (Kwh/Sq Ft)		Electricity (Btu/Sq Ft)		Fossil Fuel (Btu/Sq Ft)		Total (Btu/Sq Ft)	
		1981	1982	1981	1982	1981	1982	1981	1982
California	164,797	14.8	16.4	49,776	56,045	69,401	75,905	119,177	131,950
California	192,024	10.2	11.3	34,818	38,469	60,872	61,133	95,690	99,602
California	300,434	10.9	10.2	37,349	34,683	66,391	65,678	103,740	100,361
Florida	178,360	35.4	23.2	120,914	79,149	10,270	7,838	131,184	86,987
Florida	133,160	21.4	20.3	72,912	69,403	48,878	44,978	121,790	114,390
Florida	188,697	25.6	26.2	87,241	89,360	43,445	29,677	130,686	119,037
Illinois	183,221	19.4	29.4	66,357	100,300	7,668	14,447	74,025	114,747
Illinois	435,620	18.0	18.9	61,319	64,421	26,619	24,016	87,938	88,437
Kentucky	177,949	21.0	20.3	71,672	69,177	28,795	28,952	100,467	98,129
New York	322,000	17.9	17.8	60,907	60,727	10,270	74,792	71,177	135,519
Oregon	390,130	15.8	12.4	53,941	42,206	68,601	30,903	122,542	73,109
Pennsylvania	317,273	16.5	16.6	56,395	56,469	52,731	32,656	109,126	89,125
Tennessee	144,546	19.1	19.7	65,363	67,300	65,404	72,516	130,767	139,816
Texas	203,855	24.0	22.9	82,171	78,119	66,655	66,856	148,826	144,975

Average/ All Properties:	1981	1982
Btu/sq ft	103,107	108,238

Appendix A-5

ANNUAL ENERGY REQUIREMENTS - 1982
With Comparison to 1981 Energy Use

13 Selected Properties
Over 500 Rooms

Location (State)	Property Size (Sq Ft)	Electricity (Kwh/Sq Ft)		Electricity (Btu/Sq Ft)		Fossil Fuel (Btu/Sq Ft)		Total (Btu/Sq Ft)	
		1981	1982	1981	1982	1981	1982	1981	1982
California	281,166	17.0	15.3	58,001	52,037	57,796	59,207	115,797	111,244
California	543,017	11.8	15.0	40,190	51,072	46,971	46,665	87,161	97,737
California	1,377,034	13.5	12.2	45,976	41,382	63,616	54,563	109,592	95,945
Georgia	1,170,600	25.5	24.5	87,157	83,487	41,110	33,654	128,267	117,141
Hawaii	233,626	26.3	26.0	89,677	88,620	51,634	52,010	141,311	140,630
Illinois	314,692	20.0	22.6	68,325	76,498	49,400	50,627	117,725	127,575
Illinois	1,750,000	10.9	10.7	37,251	36,483	119,279	121,846	156,530	158,329
Louisiana	969,699	32.6	32.3	111,423	110,307	51,188	48,467	162,611	158,774
Nevada	263,274	18.0	39.0	61,685	132,995	32,855	23,025	94,540	156,020
Nevada	3,012,086	24.5	20.3	83,761	69,307	56,171	45,557	139,932	118,864
New York	1,569,570	13.7	14.5	46,690	49,582	89,136	91,791	135,826	141,373
Tennessee	543,017	14.6	15.0	49,829	51,072	39,724	46,665	89,553	97,737
Texas	593,807	35.3	31.3	120,327	106,507	140,566	127,796	260,893	234,745

Average/ All Properties:	1981	1982
Btu/sq ft	139,647	132,516

APPENDIX B

Annual Energy Requirements
of
21 All-Electric Hotels/Motels
1982 versus 1981

By Size of Property

Appendix B-1: Up to 150 Rooms (18 Properties)

Appendix B-2: Over 150 Rooms (3 Properties)

Appendix B-1

Energy Use
All-Electric Hotels/Motels

18 Selected Properties
Up to 150 Rooms

Location	Sq Ft	Electricity (MM Btu) 1981	Electricity (MM Btu) 1982	Btu/Sq Ft/Yr 1981	Btu/Sq Ft/Yr 1982	Kwh/Sq Ft/Yr 1981	Kwh/Sq Ft/Yr 1982
Dist. of Columbia	65,375	7,339	6,937	112,260	106,111	32.9	31.1
Florida	17,108	1,382	1,303	80,781	76,163	23.7	22.3
Florida	17,108	1,659	1,410	96,972	82,417	28.4	24.2
Illinois	19,116	2,936	3,047	153,589	159,395	45.0	52.2
Kentucky	18,230	2,587	2,365	141,909	129,731	41.6	38.0
North Carolina	17,108	1,315	1,183	76,865	69,149	22.5	20.3
Ohio	17,108	1,721	1,691	100,596	98,843	29.3	29.0
South Carolina	17,108	1,555	1,281	90,893	74,877	26.6	21.9
South Carolina	17,108	1,583	1,384	92,530	80,898	27.1	23.7
South Carolina	17,108	1,592	1,429	93,056	83,528	27.3	24.5
South Carolina	17,108	1,037	1,144	60,675	66,869	17.8	19.6
South Carolina	17,108	1,426	1,215	83,353	71,019	24.4	20.8
Virginia	17,108	1,307	1,249	76,397	73,007	22.4	21.4
Virginia	17,108	1,071	1,970	62,602	115,151	18.3	19.7
Virginia	17,108	1,282	1,408	74,936	82,301	22.0	24.1
Virginia	17,108	1,437	1,429	83,996	83,528	24.6	24.5
Virginia	17,108	1,325	1,171	77,449	68,448	22.7	20.1
Virginia	17,108	1,381	1,243	80,722	72,656	23.7	21.3
Totals/Averages- 18 Properties	359,341	33,935	32,859	94,432	91,442	27.7	26.8

Appendix B-2

Energy Use
All-Electric Hotels/Motels

3 Selected Properties
Over 150 Rooms

Location	Sq Ft	Electricity (MM Btu) 1981	Electricity (MM Btu) 1982	Btu/Sq Ft/Yr 1981	Btu/Sq Ft/Yr 1982	Kwh/Sq Ft/Yr 1981	Kwh/Sq Ft/Yr 1982
Connecticut	205,703	19,100	19,981	92,852	97,135	27.2	28.5
Indiana	37,668	4,493	4,577	119,279	121,509	35.0	35.6
Texas	82,984	5,968	5,473	71,917	65,952	21.0	19.3
Totals/Averages- 3 Properties	326,355	29,561	30,031	92,019	90,579	27.0	26.5

APPENDIX C

Annual Energy Requirements - 1982
of
208 Hotels/Motels
(Conventional Energy Systems and All-Electric)

By Geographical Location

Appendix C-1: Northeastern U.S. (16 properties)

Appendix C-2: Midwestern U.S. (50 properties)

Appendix C-3: Southeastern U.S. (72 properties)

Appendix C-4: South Central U.S. (34 properties)

Appendix C-5: Rocky Mountain States (12 properties)

Appendix C-6: Pacific Coast States (24 properties)

Appendix C-1

Annual Energy Requirements (1982)
16 Hotels/Motels

Northeastern U.S.

State	Sq Ft	Btu/Elec (Millions)	Btu/Fossil (Millions)	Total Btu's (Millions)	Btu/Sq Ft
Connecticut	205,703	19,100	-	19,100	96,852
Dist of Columbia	65,375	6,937	-	6,937	106,111
Maryland	54,274	3,084	5,653	8,737	160,980
Massachusetts	59,516	3,876	4,059	7,935	133,325
Massachusetts	160,885	13,880	10,959	24,839	154,390
New Hampshire	103,692	2,736	8,489	11,225	108,253
New York	69,769	3,760	4,699	8,459	121,243
New York	80,998	5,521	2,966	8,487	104,780
New York	74,596	2,826	8,789	11,615	155,705
New York	83,871	7,674	2,502	10,176	121,329
New York	124,483	7,592	7,007	14,599	117,277
New York	322,000	19,554	24,083	43,637	135,519
New York	1,569,570	77,822	144,072	221,894	141,373
Pennsylvania	72,713	4,671	4,695	9,366	128,808
Pennsylvania	156,211	5,725	16,307	22,032	141,040
Pennsylvania	317,273	17,916	10,361	28,277	89,125
Total/Average- 16 properties	129,885 Btu/Sq Ft				

Appendix C-2

Annual Energy Requirements (1982)
50 Hotels/Motels

Midwestern U.S.

State	Sq Ft	Btu/Elec (Millions)	Btu/Fossil (Millions)	Total Btu's (Millions)	Btu/Sq Ft
Illinois	103,628	9,489	8,575	18,064	174,316
Illinois	110,890	5,462	7,838	13,300	119,939
Illinois	146,701	9,032	8,459	17,491	119,229
Illinois	134,269	8,342	10,118	18,460	137,485
Illinois	121,223	8,052	6,653	14,705	121,305
Illinois	183,221	18,377	2,647	21,024	114,747
Illinois	435,620	28,063	10,462	38,525	88,437
Illinois	19,116	3,047	-	3,047	159,395
Illinois	314,692	24,215	15,932	40,147	127,575
Illinois	1,750,000	63,846	213,230	277,076	158,329
Indiana	158,834	10,813	11,619	22,432	141,229
Indiana	80,347	5,370	6,671	12,041	149,862
Indiana	37,668	4,493	-	4,493	119,279
Indiana	83,216	3,576	8,843	12,419	149,238
Indiana	129,117	8,782	12,528	21,310	165,044
Michigan	77,110	4,644	5,694	10,338	134,068
Michigan	88,374	5,405	7,268	12,673	143,402
Michigan	99,792	4,773	7,790	12,563	125,892
Michigan	136,885	9,264	14,808	24,072	175,855
Michigan	114,813	6,574	11,300	17,874	155,679
Michigan	123,985	6,667	7,798	14,465	116,667
Minnesota	69,189	3,203	7,079	10,282	148,607
Minnesota	63,338	2,708	9,290	11,998	189,428
Minnesota	99,743	6,732	8,003	14,735	147,729
Minnesota	82,386	2,493	7,990	10,483	127,243
Minnesota	107,574	3,893	11,236	15,129	140,403
Missouri	94,780	5,391	8,931	14,322	151,108
Missouri	90,022	4,482	10,657	15,139	162,170
Missouri	95,689	5,063	2,862	7,925	82,820
Missouri	207,934	9,083	13,712	22,795	109,626
Missouri	124,410	5,367	8,199	13,566	109,043
Missouri	261,718	11,806	17,223	29,029	110,917
Ohio	54,735	3,448	3,265	6,713	122,243
Ohio	48,860	3,765	2,874	6,639	135,878
Ohio	57,200	4,338	2,900	7,238	126,538
Ohio	95,278	6,251	6,093	12,344	129,558

Appendix C-2 (Cont'd)

Midwestern U.S.

State	Sq Ft	Btu/Elec (Millions)	Btu/Fossil (Millions)	Total Btu's (Millions)	Btu/Sq Ft
Ohio	61,575	3,416	4,148	7,564	122,842
Ohio	53,818	2,300	7,767	10,067	187,056
Ohio	55,262	3,447	7,234	10,681	193,279
Ohio	86,139	3,088	9,108	12,196	141,585
Ohio	75,884	6,026	6,120	12,146	160,060
Ohio	17,108	1,691	-	1,691	98,843
ohio	88,838	5,848	4,556	10,404	117,112
Ohio	109,362	6,479	12,542	19,021	173,927
Ohio	120,668	5,900	8,784	14,684	121,689
Ohio	126,902	6,653	12,488	19,141	150,833
Ohio	144,157	8,059	7,769	15,828	109,797
Ohio	165,974	10,396	13,120	23,516	141,683
Wisconsin	62,791	3,456	3,388	6,844	108,997
Wisconsin	104,398	4,838	15,555	20,393	195,339

Total/Average
50 Properties 138,694 Btu/sq ft

Appendix C-3

Annual Energy Requirements (1982)
72 Hotels/Motels

Southeastern U.S.

State	Sq Ft	Btu/Elec (Millions)	Btu/Fossil (Millions)	Total Btu's (Millions)	Btu/Sq Ft
Alabama	72,745	6,237	4,846	11,083	152,354
Alabama	109,552	8,636	7,310	15,946	145,556
Alabama	101,157	6,387	4,232	10,619	104,975
Florida	59,247	4,343	1,804	6,147	103,752
Florida	51,682	5,282	469	5,751	111,277
Florida	146,708	11,301	8,973	20,274	138,193
Florida	17,108	1,303	-	1,303	76,163
Florida	17,108	1,410	-	1,410	82,417
Florida	178,360	14,117	1,398	15,515	86,987
Florida	80,414	4,994	3,918	8,912	110,839
Florida	119,548	10,983	5,419	16,402	137,200
Florida	107,709	12,525	3,772	16,297	151,305
Florida	256,173	16,122	7,296	23,418	91,415
Florida	148,592	11,733	4,796	16,529	111,237
Florida	107,291	8,656	5,798	14,454	133,931
Florida	133,106	9,238	5,988	15,226	114,390
Florida	188,697	16,862	5,600	22,462	119,037
Georgia	1,170,600	97,730	39,395	137,125	117,141
Kentucky	37,928	3,702	3,405	7,107	187,381
Kentucky	55,151	4,361	3,852	8,213	148,918
Kentucky	66,000	3,380	6,756	10,136	153,576
Kentucky	177,949	12,310	5,152	17,462	98,129
Mississippi	74,276	6,322	4,620	10,942	147,315
Mississippi	93,531	10,184	5,317	15,501	165,731
Mississippi	118,200	11,025	8,595	19,620	166,104
North Carolina	17,108	1,183	-	1,183	69,149
North Carolina	84,561	9,042	3,687	12,729	150,530
South Carolina	88,321	5,766	3,546	9,312	105,433
South Carolina	66,780	4,084	6,793	10,877	162,878
South Carolina	17,108	1,281	-	1,281	74,877
South Carolina	17,108	1,384	-	1,384	80,898
South Carolina	17,108	1,429	-	1,429	83,528
South Carolina	17,108	1,144	-	1,144	66,869
South Carolina	17,108	1,215	-	1,215	71,019
South Carolina	88,789	7,752	1,895	9,647	108,651
South Carolina	99,358	6,742	8,196	14,938	150,346

Appendix C-3 (Cont'd)

Southeastern U.S.

State	Sq Ft	Btu/Elec (Millions)	Btu/Fossil (Millions)	Total Btu's (Millions)	Btu/Sq Ft
South Carolina	83,268	6,920	5,245	12,165	146,094
Tennessee	62,950	4,128	3,438	7,566	120,191
Tennessee	41,819	3,350	2,023	5,373	128,482
Tennessee	92,772	6,435	7,132	13,567	146,241
Tennessee	55,887	4,797	4,106	8,903	159,304
Tennessee	54,567	3,692	5,443	9,135	167,089
Tennessee	55,162	3,507	5,578	9,085	164,697
Tennessee	87,148	5,575	6,939	12,514	143,595
Tennessee	71,978	5,954	5,325	11,279	156,701
Tennessee	101,606	5,988	7,664	13,652	134,362
Tennessee	90,838	6,476	5,126	11,602	127,722
Tennessee	77,406	7,066	3,303	10,369	133,956
Tennessee	84,557	7,298	5,516	12,814	151,543
Tennessee	95,738	8,097	3,636	11,733	122,554
Tennessee	121,559	6,261	6,590	12,851	105,718
Tennessee	121,400	6,524	5,554	12,078	99,490
Tennessee	92,750	8,315	3,178	11,493	123,914
Tennessee	120,894	7,599	6,496	14,095	116,590
Tennessee	138,981	9,782	5,701	15,483	111,404
Tennessee	148,482	12,235	8,605	20,840	136,717
Tennessee	144,547	9,728	10,482	20,210	139,816
Tennessee	543,017	27,733	25,340	53,073	97,737
Virginia	62,584	6,524	25	6,549	104,643
Virginia	17,108	1,249	-	1,249	73,007
Virginia	17,108	1,970	-	1,970	115,151
Virginia	17,108	1,408	-	1,408	82,301
Virginia	17,108	1,429	-	1,429	83,528
Virginia	17,108	1,171	-	1,171	68,448
Virginia	17,108	1,243	-	1,243	72,656
Virginia	65,032	4,910	5,326	10,236	157,399
West Virginia	47,860	3,341	2,849	6,190	129,336
West Virginia	48,860	4,404	3,330	7,734	158,289
West Virginia	56,201	3,761	3,499	7,260	129,179
West Virginia	65,924	4,738	7,183	11,921	180,829
West Virginia	77,377	5,431	5,235	10,666	137,845
Total/Average 83 Properties	123,324 Btu/Sq Ft				

Appendix C-4

Annual Energy Requirements (1982)
34 Hotels/Motels

South Central U.S.

State	Sq Ft	Btu/Elec (Millions)	Btu/Fossil (Millions)	Total Btu's (Millions)	Btu/Sq Ft
Arkansas	48,904	4,575	4,572	9,147	187,040
Arkansas	111,997	8,974	8,753	17,727	158,281
Arkansas	148,003	9,847	7,668	17,515	118,342
Louisiana	97,821	10,034	5,398	15,432	157,757
Louisiana	104,013	9,840	6,144	15,984	153,673
Louisiana	77,884	8,060	4,722	12,782	164,116
Louisiana	142,920	12,061	10,181	22,242	155,626
Louisiana	969,699	106,965	48,467	155,432	160,289
Oklahoma	86,314	6,346	5,186	11,532	133,605
Texas	37,001	1,821	1,281	3,102	83,836
Texas	37,375	1,980	1,662	3,642	97,445
Texas	37,375	2,282	1,588	3,870	103,545
Texas	38,123	1,955	1,876	3,831	100,490
Texas	38,870	2,578	2,102	4,680	120,402
Texas	38,870	2,175	1,598	3,773	97,067
Texas	38,870	1,902	1,448	3,350	86,184
Texas	39,618	3,876	477	4,353	109,874
Texas	91,602	6,756	4,898	11,654	127,224
Texas	45,598	2,698	1,536	4,234	92,855
Texas	45,598	2,152	1,498	3,650	80,047
Texas	47,466	2,957	718	3,675	77,424
Texas	48,214	3,209	2,837	6,046	125,399
Texas	62,707	5,643	4,299	9,942	158,547
Texas	90,604	7,339	6,738	14,077	155,368
Texas	59,897	8,230	2,726	10,956	182,914
Texas	73,907	5,725	6,854	12,579	170,200
Texas	78,412	5,370	5,650	11,020	140,540
Texas	123,926	8,213	6,120	14,333	115,657
Texas	141,509	8,994	9,306	18,300	129,320
Texas	82,894	7,128	7,067	14,195	171,242
Texas	82,984	5,968	-	5,968	71,917
Texas	171,205	9,583	13,830	24,413	136,754
Texas	203,885	15,925	13,629	29,554	144,975
Texas	593,807	63,507	75,886	139,393	234,745
Total/Average-34 Properties	155,003 Btu/Sq Ft				

Appendix C-5

Annual Energy Requirements (1982)
12 Hotels/Motels

Rocky Mountain States

State	Sq Ft	Btu/Elec (Millions)	Btu/Fossil (Millions)	Total Btu's (Millions)	Btu/Sq Ft
Arizona	57,387	4,248	4,189	8,437	147,020
Arizona	57,714	3,426	4,506	7,932	137,437
Arizona	70,065	5,135	2,674	7,809	111,454
Colorado	94,846	3,801	8,038	11,839	124,823
Nevada	66,357	2,528	7,721	10,249	154,452
Nevada	152,763	5,920	6,708	12,628	82,664
Nevada	263,274	35,014	6,062	41,076	156,020
Nevada	3,012,086	208,759	149,269	358,028	118,864
New Mexico	146,224	7,834	8,090	15,924	108,886
New Mexico	39,618	1,547	1,700	3,247	81,958
Utah	80,649	3,569	12,802	16,371	202,990
Utah	81,378	4,398	7,875	12,273	150,815
Total/Average- 12 Properties	122,700 Btu/Sq Ft				

Appendix C-6

Annual Energy Requirements (1982)
24 Hotels/Motels

Pacific Coast States

State	Sq Ft	Btu/Elec (Millions)	Btu/Fossil (Millions)	Total Btu's (Millions)	Btu/Sq Ft
Alaska	137,104	6,681	4,423	11,104	127,547
California	70,883	3,207	3,481	6,688	94,352
California	66,665	3,507	2,987	6,494	97,412
California	63,898	3,995	2,939	6,934	108,516
California	59,732	3,156	3,282	6,438	107,781
California	76,227	2,839	2,828	5,667	74,344
California	143,081	7,121	6,094	13,215	92,360
California	101,006	4,954	4,574	9,528	94,331
California	77,309	5,231	6,701	11,932	154,342
California	109,325	5,101	3,541	8,642	79,049
California	83,959	4,743	4,954	9,697	115,497
California	118,792	6,693	8,164	14,857	125,067
California	104,280	5,527	4,690	10,217	97,977
California	192,024	7,387	11,739	19,126	99,602
California	164,797	9,236	12,509	21,745	131,950
California	300,434	10,420	19,732	30,152	100,361
California	281,166	14,631	16,647	31,278	111,244
California	543,017	27,733	25,340	53,073	97,737
California	1,377,034	56,984	75,135	132,119	95,945
Hawaii	90,318	9,287	3,652	12,939	143,260
Hawaii	233,626	20,704	12,151	32,855	140,630
Oregon	304,965	16,466	12,056	28,522	73,109
Washington	124,075	4,818	9,914	14,732	118,735
Washington	30,545	2,044	4,041	6,085	199,215
Total/Average- 24 Properties	103,834 Btu/Sq Ft				

APPENDIX D

Domestic Water Use of 162 Hotels/Motels - 1982

By Size of Property

Appendix D-1: Less than 75 Rooms (14 Properties)

Appendix D-2: 76 to 150 Rooms (44 Properties)

Appendix D-3: 151 to 200 Rooms (34 Properties)

Appendix D-4: 201 to 300 Rooms (47 Properties)

Appendix D-5: 301 to 500 Rooms (11 Properties)

Appendix D-6: Over 500 Rooms (12 Properties)

Appendix D-1

Domestic Water Use by Hotels/Motels
1982
(Less than 75 Rooms - 14 Properties)

Property Location (State)	No. of Rooms	Facilities[1]	Gallons Per Available Room	Gallons Per Occupied Room	Gallons Per Guest
Florida	48	L	148	-	102
Florida	48	L	184	-	149
North Carolina	48	L,SP	88	-	52
Ohio	48	L	77	-	84
South Carolina	48	L	101	-	84
South Carolina	48	L	114	-	77
South Carolina	48	L,SP	108	-	73
South Carolina	48	L	86	-	70
South Carolina	48	L	84	-	68
Virginia	48	L	60	-	59
Virginia	48	L	78	-	67
Virginia	48	L	88	-	67
Virginia	48	L	85	-	60
Virginia	48	L	85	-	59

Note:
1 Facilities. L denotes property has a laundry
SP denotes property has a swimming pool

Appendix D-2

Domestic Water Use by Hotels/Motels
1982
(76 to 150 Rooms - 44 Properties)

Property Location (State)	No. of Rooms	Facilities[1]	Gallons Per Available Room	Gallons Per Occupied Room	Gallons Per Guest
Arizona	141	K, L, SP	213	293	-
Arizona	143	K, L, SP	199	310	-
Arizona	108	K, L, SP	254	385	-
Arkansas	83	L, SP	116	134	-
California	124	K, L, SP	223	284	-
California	126	K, L, SP	195	217	-
California	126	K, L, SP	164	189	-
California	128	K, L, SP	212	229	-
California	132	K, L, SP	162	213	-
Florida	116	K, L, SP	166	264	-
Florida	79	L	154	-	121
Kentucky	84	K, L, SP	-	-	111
Kentucky	141	K, L, SP	-	-	150
Maryland	141	K, L, SP	199	239	-
Massachusetts	116	K, L, SP	84	105	-
Michigan	147	K, L, SP	130	232	-
Minnesota	126	L, SP	76	-	94
New Hampshire	120	K, L, SP	158	224	-
New York	119	K, L, SP	101	118	-
Ohio	104	K, L, SP	-	-	135
Ohio	106	K, L, SP	-	-	156
Ohio	107	K, L, SP	-	-	262
Ohio	120	K, L, SP	-	-	160
Ohio	140	K, L, SP	146	224	-
Ohio	142	K, L, SP	-	-	115
Ohio	149	K, L, SP	137	217	-
Ohio	148	K, L, SP	161	226	-
Pennsylvania	135	K, L, SP	190	293	-
Tennessee	97	K, L, SP	176	234	-
Tennessee	120	K, L, SP	-	-	108
Tennessee	114	K, L, SP	211	237	-
Tennessee	150	K, L, SP	137	199	-
Texas	100	L, SP	204	-	233
Texas	104	L, SP	133	-	159
Texas	138	L, SP	101	-	124

Appendix D-2 (Cont'd)

Domestic Water Use by Hotels/Motels
1982
(76 to 150 Rooms - 44 Properties)

Property Location (State)	No. of Rooms	Facilities[1]	Gallons Per Available Room	Gallons Per Occupied Room	Gallons Per Guest
Texas	132	K, L, SP	110	-	130
Texas	122	L, SP	151	-	173
Texas	102	L, SP	155	-	189
Texas	127	L, SP	130	-	153
Texas	129	L, SP	142	-	174
Virginia	130	K, L, SP	158	231	-
Washington	109	K, L, SP	251	379	-
West Virginia	109	L, SP	-	-	170
Wisconsin	106	K, L, SP	110	162	-

Note:

1 Facilities. K denotes property has a kitchen
L denotes property has a laundry
SP denotes property has a swimming pool

Appendix D-3

Domestic Water Use by Hotels/Motels
1982
151 - 200 Rooms (34 Properties)

Property Location (State)	No. of Rooms	Facilities[1]	Gallons Per Available Room	Gallons Per Occupied Room	Gallons Per Guest
Alabama	160	K, L, SP	230	294	-
California	190	K, L, SP	188	247	-
California	200	K, L, SP	216	237	-
Colorado	168	K, L, SP	121	208	-
Florida	180	K, L, SP	155	229	-
Illinois	191	K, L, SP	-	-	157
Indiana	161	K, L, SP	79	175	-
Kentucky	172	K, L, SP	-	-	154
Michigan	152	K, L, SP	126	173	-
Michigan	153	K, L, SP	132	222	-
Michigan	155	K, L, SP	279	236	-
Minnesota	173	K, L, SP	198	294	-
Minnesota	165	K, L	112	-	100
Minnesota	194	K, L, SP	143	276	-
Missouri	167	K, L, SP	185	287	-
Nevada	150	K, L, SP	132	266	-
New York	152	K, L, SP	-	-	111
North Carolina	165	K, L, SP	166	303	-
Oklahoma	159	K, L, SP	-	-	204
South Carolina	152	K, L, SP	246	326	-
South Carolina	176	K, L, SP	303	370	-
South Carolina	180	K, L, SP	187	227	-
Tennessee	152	K, L, SP	187	293	-
Tennessee	161	K, L, SP	168	216	-
Tennessee	171	K, L, SP	234	342	-
Tennessee	173	K, L, SP	160	243	-
Tennessee	178	K, L, SP	131	232	-
Texas	163	K, L, SP	149	193	-
Texas	165	K, L, SP	228	288	-
Texas	175	K, L, SP	192	222	-
Texas	178	K, L, SP	185	263	-
Texas	192	K, L, SP	236	346	-
Utah	160	K, L, SP	199	248	-
Virginia	199	K, L, SP	199	248	-

Note:

1 Facilities. K denotes property has a kitchen
L denotes property has a laundry
SP denotes property has a swimming pool

Appendix D-4

Domestic Water Use By Hotels/Motels
1982
201 - 300 Rooms (47 Properties)

Property Location (State)	No. of Rooms	Facilities[1]	Gallons Per Available Room	Gallons Per Occupied Room	Gallons Per Guest
Alabama	210	K, L, SP	129	181	-
Alabama	242	K, L, SP	148	335	-
Alaska	252	K, L, SP	160	-	-
Arkansas	293	K, L, SP	130	198	-
Arkansas	202	K, L, SP	188	220	-
California	233	K, L, SP	168	207	-
California	201	K, L, SP	131	209	-
California	210	K, L, SP	-	-	198
California	200	K, L, SP	111	145	-
Florida	224	K, L, SP	130	194	-
Florida	266	K, L, SP	179	227	-
Hawaii	247	K, L, SP	162	191	-
Illinois	213	K, L, SP	202	245	-
Illinois	233	K, L, SP	88	130	-
Illinois	234	K, L, SP	233	357	-
Illinois	243	K, L, SP	109	179	-
Indiana	229	K, L, SP	135	196	-
Indiana	263	K, L, SP	125	239	-
Louisiana	233	K, L, SP	381	427	-
Massachusetts	304	K, L, SP	231	282	-
Michigan	208	K, L, SP	-	-	140
Michigan	211	K, L, SP	123	202	-
Missouri	262	K, L, SP	161	322	-
Missouri	220	K, L, SP	188	-	167
Missouri	237	K, L, SP	- 162	341	-
Nevada	203	K, L, SP		-	-
Nevada	285	K, L, SP	-	-	144
New Mexico	291	K, L, SP	-	173	-
New York	224	K, L, SP	124	234	-
Ohio	214	K, L, SP	196 -	-	185
Ohio	246	K, L, SP	-	-	248
Ohio	248	K, L, SP	167	278	-
Ohio	207	K, L, SP	111	184	-
Ohio	224	K, L, SP	138	209	-
Pennsylvania	294	K, L, SP	101	166	-

Appendix D-4 (Cont'd)

Domestic Water Use By Hotels/Motels
1982
201 - 300 Rooms (47 Properties)

Property Location (State)	No. of Rooms	Facilities[1]	Gallons Per Available Room	Gallons Per Occupied Room	Gallons Per Guest
South Carolina	265	K, L, SP	144	198	-
Tennessee	205	K, L, SP	96	134	-
Tennessee	207	K, L, SP	113	148	-
Tennessee	207	K, L, SP	137	176	-
Tennessee	215	K, L, SP	104	159	-
Tennessee	216	K, L, SP	169	316	-
Tennessee	233	K, L, SP	137	248	-
Tennessee	238	K, L, SP	159	192	-
Tennessee	272	K, L, SP	159	219	-
Texas	208	K, L, SP	199	297	-
Texas	285	K, L, SP	173	-	178
Washington	260	K, L, SP	182	268	-

Note:

1 Facilities. K denotes property has a kitchen
L denotes property has a laundry
SP denotes property has a swimming pool

Appendix D-5

Domestic Water Use by Hotels/Motels
1982
301 - 500 Rooms (11 Properties)

Property Location (State)	No. of Rooms	Facilities[1]	Gallons Per Available Room	Gallons Per Occupied Room	Gallons Per Guest
California	390	K, L, SP	192	232	-
California	337	K, L, SP	162	217	-
California	405	K, L, SP	202	280	-
Florida	338	K, L, SP	263	421	-
Hawaii	311	K, L, SP	102	192	-
Illinois	445	K, L, SP	120	-	216
Missouri	391	K, L, SP	188	292	-
New York	474	K, L, SP	219	350	-
Oregon	460	K, L, SP	151	-	216
Pennsylvania	378	K, L, SP	103	-	140
Tennessee	301	K, L, SP	214	292	-

Note:

1 Facilities. K denotes property has a kitchen
L denotes property has a laundry
SP denotes property has a swimming pool

Appendix D-6

Domestic Water Use By Hotels/Motels
1982
Over 500 Rooms (12 Properties)

Property Location (State)	No. of Rooms	Facilities[1]	Gallons Per Available Room	Gallons Per Occupied Room	Gallons Per Guest
California	541	K, L, SP	105	-	106
California	557	K, L, SP	294	584	-
California	1,800	K, L, SP	134	-	133
Georgia	1,209	K, L, SP	246	-	250
Hawaii	636	K, L, SP	248	276	-
Illinois	500	K, L, SP	174	247	-
Illinois	2,275	K, L, SP	178	-	389
Louisiana	1,146	K, L, SP	200	-	184
Nevada	993	K, L, SP	100	131	-
Nevada	3,174	K, L, SP	198	-	203
New York	2,131	K, L, SP	153	-	145
Tennessee	546	K, L, SP	300	584	-

Note:

1 Facilities. K denotes property has a kitchen
L denotes property has a laundry
SP denotes property has a swimming pool